

**Institute of Pharmaceutical Technology and  
Regulatory Affairs  
Faculty of Pharmacy  
University of Szeged**

# **I. Symposium of Young Researchers on Pharmaceutical Technology, Biotechnology and Regulatory Science**

**Szeged, Hungary**



**31<sup>th</sup> January  
2019**



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**OP-16**

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## **Lipid-based delivery systems for periodontitis treatment**

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Periodontitis is a chronic inflammatory disease induced by anaerobic bacteria. It is affecting tooth supporting tissues and without proper treatment it may lead to tooth loss.

Oral administration of antibiotics may not provide adequate drug levels in the periodontal pockets to eliminate microorganisms and could also lead to serious side effects, while the administration of local delivery systems containing antibiotics could help eliminate the disease [1].

The aim of the present work was to develop a swellable, biodegradable, biocompatible, mucoadhesive lipid-based local delivery systems containing antibiotics for the treatment of periodontal disease.

Lipid-based systems may be able to protect the active ingredients from environmental hazards; thus decomposition, while providing sustained release. Incorporated polymers may help the swelling and degradation; therefore, the drug release and the elimination of the delivery systems [1].

During the formulation period, different methods were used to determine the optimal composition of the lipid formulations. DSC, consistency, wettability, swelling and degradation, drug release measurements and an antimicrobial study were carried out.

Results of the different measurements and investigations show that formulations with optimal composition could provide sustained drug release and a long-lasting antimicrobial effect against periodonthopathogenic bacteria.

### **References**

1. Leber A., Curr. Drug Deliver. 15(6), 887-897 (2018)